# RISC-V Edge-AI Workshop – Neural Network Implementation Guide

## Step-by-Step Instructions:

### Open the Workshop Repository

Visit the RISC-V Edge-AI Workshop GitHub repository using this link:
https://github.com/dhanvantibhavsar/RiscV_Edge_AI_Workshop
This repository contains the edited quantized AI model to be used as a starting point, tailored for the VSDSquadron Pro Board neural network implementation section.

### Understand the Directory Structure:

- Training/: Includes scripts and resources for training the NN model.
- VSD_Camera_Interfacing/: Code to interface a camera with the VSD platform.
- VSD_Prediction/: Inference-side code to run predictions.
- images/: Demo images, diagrams, or videos.

### Setup Environment on Your Local Machine:

Clone the repository:

```
git clone https://github.com/dhanvantibhavsar/RiscV_Edge_AI_Workshop.git
cd RiscV_Edge_AI_Workshop
```

Create and activate a Python virtual environment:

```
python -m venv venv
source venv/bin/activate   # On Windows: venv\Scripts\activate
```

Install required Python packages:

```
pip install -r requirements.txt
```

### Run the Neural Network Training Module

Use the training.py script to train the neural network and exportquant.py script for quantization. This will generate the quantized model files.

### Deploy on VSDSquadron Pro Board

Follow steps as explained in the workshop

### Report Bugs and Issues

If you encounter issues, refer to the repository README and documentation in each folder.

## Useful Reference File

The README.md in the repository provides an overview and workflow summary.

## Optional Enhancements (Bonus Exploration)

- Modify trainingparameters.yaml for different hyperparameters.
- Try different datasets.
- Share improvements via GitHub.